

In connection with the Connecticut River it is interesting to note that all records for continuous navigation of the lower river have been surpassed, the river having been open without intermission since March 24, 1923.

The second flood of importance was that of the Wabash River of Indiana and Illinois. It was caused by the heavy rains of March 13 and 14 over the Wabash drainage basin. At Lafayette, Ind., the crest stage of 22 feet on March 15, was 11 feet above the flood stage, while below Lafayette the crests averaged from 4 to 5 feet above the flood stages.

As there were no growing crops in the lowlands the losses were small, probably as much as \$20,000, mostly through enforced suspension of certain business activities in the urban districts. The reported value of the property saved through the Weather Bureau warnings was \$30,000.

An ice gorge about 5 miles in length and 20 feet in height formed between March 3 and 5 in the Missouri River from the mouth of the Niobrara River westward. Bottom lands in some places were under 12 feet of water, but fortunately the ice gave away in about 36 hours and the river gradually receded. Warnings were issued promptly upon receipt of the first advices and the reported losses were only \$2,500, while the saving of property by reason of the warnings was estimated at \$8,000.

## MEAN LAKE LEVELS DURING MARCH, 1925

By UNITED STATES LAKE SURVEY

[Detroit, Mich., Apr. 7, 1925]

The following data are reported in the "Notice to Mariners" of the above date:

Data	Lakes <sup>1</sup>			
	Superior	Michigan and Huron	Erie	Ontario
Mean level during March, 1925:				
Above mean sea level at New York.....	Feet 600.80	Feet 578.38	Feet 570.91	Feet 245.20
Above or below—				
Mean stage of February, 1925.....	-0.16	+0.14	+0.42	+0.79
Mean stage of March, 1924.....	-0.26	-0.31	-0.31	+0.32
Average stage for March last 10 years.....	-0.85	-1.46	-0.71	-0.21
Highest recorded March stage.....	-1.52	-4.57	-2.94	-2.61
Lowest recorded March stage.....	+0.14	-0.31	+0.08	+0.90
Average relation of the March level to—				
February level.....		+0.1	+0.2	+0.2
April level.....		-0.3	-0.6	-0.6

<sup>1</sup> Lake St. Clair's level: In March, 1925, 573.41 feet.

## FLOOD PROTECTION IN WICHITA, KANS.

By S. P. PETERSON

[Weather Bureau, Wichita, Kans.]

The city of Wichita is situated at the confluence of the Big Arkansas and the Little Arkansas Rivers, the Big Arkansas River passing through the southwestern part of the city with a southeasterly trend and the Little Arkansas flowing in a very winding course southward through the northwestern part of the city and emptying into the Big Arkansas River a short distance to the northwest of the central business section. To the east of these two rivers lies about two-thirds of the city, and this part is bisected by Chisholm creek and its continuation, the drainage canal, which flows in a general southward direction through it, emptying into the Big Arkansas River a short distance below the city.

The site of the city of Wichita has been subjected to three extensive floods, one in 1877, one in 1904, and the last in 1923. There have also been several minor floods. In extensive flooding the overflow waters of the three streams tend to merge and form a shallow lake, covering much of the city and surrounding territory.

Immediately after the flood of 1904 action was taken to control the flood waters, especially of the Little Arkansas River and Chisholm Creek (then flowing in its natural winding course southward through the eastern portion of the city) as these two streams caused the most damaging overflows. This control was accomplished to a certain extent by constructing dykes along the portion of the Little Arkansas River from which the overflow waters moved toward the central business section and by clearing the channel of that portion of the stream of such obstructions as would hinder the streamflow, while through the section drained by Chisholm Creek, a canal (the present drainage canal) was dug from the Stock Yards district, near the extreme northern portion of the city to the mouth of the stream, eliminating the windings of this stream within most of the city, making a straight course for the streamflow and also a considerably larger channel capacity than

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
ATLANTIC DRAINAGE					
Connecticut:	Feet			Feet	
White River Junction, Vt.....	15	28	( <sup>1</sup> )	22.5	30
Bellows Falls, Vt.....	12	30	30	13.4	30
Holyoke, Mass.....	9	31	( <sup>2</sup> )	9.4	31
Hartford, Conn.....	16	30	( <sup>2</sup> )	20.5	31
Unadilla, New Berlin, N. Y.....	8	15	15	8.2	15
Santee:					
Rimini, S. C.....	12	20	23	12.8	22
Ferguson, S. C.....	12	1	1	12.0	1
		21	25	12.3	23, 24
EAST GULF DRAINAGE					
Cahaba, Centerville, Ala.....	25	18	18	25.0	18
Tombigbee, Lock No. 4, Demopolis, Ala.....	39	19	27	47.0	24
Pearl, Jackson, Miss.....	20	21	30	25.5	25
GREAT LAKES DRAINAGE					
Maumee:					
Fort Wayne, Ind.....	15	14	20	19.7	15
Napoleon, Ohio.....	10	16	16	10.0	16
St. Joseph, Montpelier, Ohio.....	10	15	16	11.5	15
		20	21	11.9	20
Auglaize, Defiance, Ohio.....	10	16	16	10.9	16
MISSISSIPPI DRAINAGE					
Tuscarawas, Gnadenhutten, Ohio.....	9	20	20	9.4	20
Scioto, LaRue, Ohio.....	11	15	15	11.0	15
Green, Lock No. 2, Rumsey, Ky.....	34	( <sup>1</sup> )	3	36.6	1
Wabash:					
Lafayette, Ind.....	11	14	22	22.0	15
Terre Haute, Ind.....	16	15	25	20.9	19
Vincennes, Ind.....	14	19	29	19.5	22, 23
Mount Carmel, Ill.....	16	19	28	20.5	23, 24
White, West Fork:					
Elkhart, Ind.....	19	16	18	20.9	18
Edwardsport, Ind.....	14	17	21	17.3	19
Illinois:					
Peru, Ill.....	14	( <sup>1</sup> )	6	15.3	Feb. 25
		18	31	15.8	Mar. 23
Henry, Ill.....	7	( <sup>1</sup> )	( <sup>2</sup> )	9.6	24, 25, 26
Peoria, Ill.....	16	23	31	16.4	25, 26
Havana, Ill.....	14	24	( <sup>2</sup> )	14.3	27-30
Beardstown, Ill.....	12	( <sup>1</sup> )	( <sup>2</sup> )	15.4	28, 29
Cache, Patterson, Ark.....	9	2	6	9.9	4

<sup>1</sup> Continued from last month.

<sup>2</sup> Continued at end of month.